

IN THE CLAIMS

Please cancel claims 5-7 and 10-11 without prejudice. Please add new claims 29-34.

1. (Currently Amended) A transistor comprising:
a gate electrode formed on a gate dielectric layer formed on a substrate;
a pair of n type source/drain regions formed in said substrate on opposite sides of said laterally opposite sidewalls of said gate electrode; and
wherein said gate electrode has a central portion with a first work function formed on the gate dielectric layer over the substrate region between said source/drain regions and a pair of sidewall portions with a second work function which overlap a portion of said source/drain regions ~~wherein said central portion has a first work function and said pair of sidewall portions has a second work function~~, wherein said second work function is ~~different~~ lower than said first work function.
2. (Currently amended) The transistor of claim 1 wherein ~~said source/drain regions are n type conductivity and wherein~~ said central portion has a second work function of between 3.9 to 4.3 eV.
3. (Currently amended) The transistor of claim 2 wherein said sidewall portions of said gate electrode ~~has~~ have a work function of between 1.5 to 3.8 eV.
4. (Currently amended) The transistor of claim 1 wherein ~~said source/drain regions are formed of n type conductivity and said outside sidewall portions has~~ have a first work function which is at least 0.1 eV lower than said central portion.
5. – 7. Cancelled
8. (Currently amended) The transistor of claim 1 wherein ~~the source/drain regions are n type conductivity and wherein~~ said sidewall portions of said gate electrode are formed from a

material selected from the group consisting of scandium (Sc), magnesium (Mg) and Yttrium (Y).

9. (Currently amended) The transistor of claim 1 wherein ~~the source/drain regions are n type conductivity~~ and the central portion of said gate electrode comprises a conductive material selected from the group consisting of poly-silicon, titanium, zirconium, hafnium, tantalum, and aluminum.

10. – 28. Cancelled

29. (New) A transistor comprising:

a gate electrode formed on a gate dielectric layer formed on a substrate;

a pair of p type source/drain regions formed in said substrate on opposite sides of said laterally opposite sidewalls of said gate electrode; and

wherein said gate electrode has a central portion with a first work function formed on the gate dielectric layer over the substrate region between said source/drain regions and a pair of sidewall portions with a second work function which overlap a portion of said source/drain regions, wherein said second work function is higher than said first work function.

30. (New) The transistor of claim 29, wherein said central portion has a work function of between 4.9 to 5.3 eV.

31. (New) The transistor of claim 29, wherein said sidewall portions have a work function that is at least 0.1 eV higher than the work function of said central portion.

32. (New) The transistor of claim 29, wherein said sidewall portions of said gate electrode comprises a conductive material that is selected from the group consisting of poly-silicon, platinum, and ruthenium nitride (RuN).

33. (New) The transistor of claim 29, wherein said central portion is formed from a material selected from the group consisting of ruthenium and palladium.

34. (New) The transistor of claim 30, wherein said sidewall portions have a work function of between 5.4 to 6.0 eV.